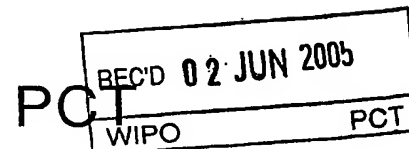


PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY



To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/IB2005/050897

International filing date (day/month/year)
14.03.2005

Priority date (day/month/year)
16.03.2004

International Patent Classification (IPC) or both national classification and IPC
G02B6/42, F21V8/00

Applicant
KONINKLIJKE PHILIPS ELECTRONICS, N.V.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IB2005/050897

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Box No. II Priority

1. ☒ The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43*bis*.1 and 64.1) is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IB2005/050897

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	4,7,9,14-17,19
	No: Claims	1-3,5,6,8,10-13,18,20
Inventive step (IS)	Yes: Claims	15,16
	No: Claims	1-14,17-20
Industrial applicability (IA)	Yes: Claims	1-20
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following documents:

D1 : JP 11 261111 A
D2 : JP 2003 086845 A
D3 : JP 05 113525 A
D4 : JP 61 230110 A
D5 : US 2004/032728 A1
D6 : JP 2000 294831 A
D7 : US 3 877 052 A
D8 : JP 60 213069 A
D9 : US 5 710 441 A
D10 : JP 58 131781 A
D11 : US 6 290 382 B1
D12 : EP 1 372 008 A
D13 : WO 00/29785 A
D14 : US 6 164 789 A
D15 : US 6 144 536 A

2. INDEPENDENT CLAIM 1

2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT. Document D1 discloses (see especially fig. 1) an illumination device, comprising:

an incoherent solid state light source (20) adapted to emit light over at least one light emission surface (top surface of 20, near reference number 27) and having a total light emission surface area (defined by its top surface); and

a reflective cavity (with sides 14) having an entrance aperture (bottom end)

adapted to receive light from the incoherent solid state light source (20) and a light extraction aperture (18) adapted to output the light from the incoherent solid state light source (20),

wherein a surface area of the light extraction aperture of the reflective cavity is smaller than the total light emission surface area of the incoherent solid state light source (clear from the figure since the cavity tapers towards the aperture).

D1 discloses all features of claim 1 and therefore the subject-matter of claim 1 is not novel.

- 2.2 The subject-matter of claim 1 is additionally not new in the sense of Article 33(2) PCT over D2, D3, D5, D11 or D12.
- 2.3 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not inventive in the sense of Article 33(3) PCT over D4 or D6 or D13

The figures of D4 indicate that the size of the aperture 4 is comparable to the emission surface area of the light emitting diodes 3. Furthermore three light emitting diodes are utilized in the fig. 2 embodiment. It appears obvious for the skilled person to vary the aperture size and number of light emitting diodes to suit his particular circumstances. In so doing he will arrive at the subject-matter of claim 1.

A similar lack of inventive step objection exists on account of D6 and D13.

3 INDEPENDENT CLAIM 5

- 3.1 The subject-matter of claim 5 is not new in the sense of Article 33(2) PCT on account of D1 (reflective coating 83 in fig. 15), D5 (fig. 8 : reflective layer 100 on surface 102 of light source, with opening 104), D7 (Fig. 1: reflective layer 14+15+16 with aperture for optical fiber 17), D8, D9 or D10.

4 INDEPENDENT CLAIM 8

4.1 The subject-matter of claim 8 is not new in the sense of Article 33(2) PCT on account of D3 (circulation device 13, extraction means 16), D5 (circulation device 22, extraction means 34), D7 (inside of reflector is the receiving surface), D8 (circulation device formed by coating 11 and mirror 13, extraction means 19), D11 (e.g. fig. 4: circulation device 147b, extraction means 115) and D12 (e.g. fig. 3a: circulation device 41, extraction means 42).

4.2 The subject-matter of claim 8 is not inventive in the sense of Article 33(3) PCT on account of D1, D4, D6 since providing extracting means is obvious (e.g. see D14, D15) and also not inventive on account of D13 since decreasing the size of the extracting means 45 appears obvious.

5 DEPENDENT CLAIMS 2-4, 6, 7, 9-14, 17-20

Dependent claims 2-4, 6, 7, 9-14, 17-20 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT).

Re Item VIII (Clarity and conciseness)

6. The term "emission surface" is not clear (Art. 6 PCT), since it has no unique meaning.

A light emitting diode (LED) is a typical incoherent solid state light source. The emission surface of an LED can be considered to be the external surface of the LED chip itself (e.g. top surface of LED 20 in D1) or the external surface of the LED module (e.g. surface 102 in fig. 8 of D5).

This ambiguity therefore throws the scope of protection into doubt.

The description does not appear to clarify this ambiguity.

7. The term "light circulation device" is also not clear. A clear claim would specify the

**WRITTEN OPINION OF THE
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AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/IB2005/050897

structural features of this device (i.e. a reflective cavity, description p. 3, l. 17) as well as its function (description p. 4, l. 1-9).

8. Claims 1 and 8 lead to a lack of conciseness of the claims as a whole since they relate to the same device.

A concise set of claims would only have a single independent claim relating to the device of claims 1 and 8.